IDENTIFIED MOTIVATION AND THE ASYMMETRIC EFFECTS OF INFORMAL CONTROL SYSTEMS ON SUBORDINATE BEHAVIOR

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IDENTIFIED MOTIVATION AND THE ASYMMETRIC EFFECTS OF INFORMAL CONTROL SYSTEMS ON SUBORDINATE BEHAVIOR

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SUMMARY

Due to the limits of formal management control systems (MCS) for tasks with unobservable/non-contractible inputs, firms often preferentially select subordinates who exhibit identified motivation (strong perceptions of importance) towards the firm's mission. While prior literature examines the "crowding out" of identified motivation by formal MCS, less is known about how *informal* MCS asymmetrically affect subordinates both with and without identified motivation. Given the difficulty in preferentially selecting subordinates with identified motivation relative to those without, I seek evidence of an informal control regime that can best utilize subordinates of all motivation levels. Using the frameworks of Self-Determination Theory and Stewardship Theory, I experimentally test subordinates' goal congruence and subsequent cooperation with the superior under conventional directives vs "nonformal communications" (unofficial management guidance). Results confirm that informal controls do not crowd out identified motivation yet do impair alignment of amotivated subordinates' actions to firm objectives.

CHAPTER 1. INTRODUCTION

Where formal management control systems (MCS) are cost-prohibitive, ineffective, or otherwise misspecified for a given environment, superiors often hire specialized subordinates to overcome typical agency conflicts (Tucker, 2019; Cardinaels & Yin, 2015). This is especially prevalent for delegated tasks where subordinate inputs are not observable or measurable, such as sustainability efforts, mentorship, and research & development (Banker, Datar, & Maindiratta, 1988). This preferential selection often favors subordinates who view said tasks as genuinely important and aligned with their values, also known as those with identified motivation for an objective (Burton, Lydon, D'Alessandro, & Koestner, 2006). While the recruitment of identified motivation subordinates is widely accepted and endorsed by the research and practice literature (Kreutzer, Cardinal, Walter, & Lechner, 2016), few studies have addressed the potential drawbacks and how to remedy them.

It is tenable that a firm cannot solely recruit and retain identified motivation subordinates, and must instead recruit subordinates with a range of motivation levels (including none at all) for unobservable tasks. Relative to the non-identified motivation (or "amotivated") subordinate, those with identified motivation are less common in the labor pool, may not adapt well to changes in organizational mandates, and exhibit a higher propensity to deviate from stakeholder preferences (Chan & Zhang, 2019; Clark & Saxberg, 2019; Harter, 2018). Moreover, even if formal MCS are well-specified for a task, prior literature warns of the negative effects of such extrinsic control on subordinate motivation (also known as "crowd-out") (Bénabou & Tirole, 2003; Christ, Emett,

Summers, & Wood, 2012). Unable to rely on either preferential subordinate selection or formal MCS, firms do have a thus far under-researched approach: the asymmetric effects of *informal* MCS on subordinates with and without identified motivation.

In this study, I propose that the impacts of informal MCS over unobservable input tasks are divergently dependent on the subordinate's identified motivation for the superior's objective. While informal MCS can avoid crowd-out effects among subordinates with identified motivation, they may spark unintended consequences among amotivated subordinates. Using the frameworks of Self-Determination Theory (regarding divergent motivations) and Stewardship Theory (concerning differing management/control approaches), I test the relative effects of an informal control, "nonformal communications," on subordinate goal congruence and subsequent cooperation with the superior. Nonformal communications are defined as nonbinding management directives that enculture subordinates to organizational norms. Typically occurring outside the traditional channels of management hierarchy, these nonformal communications can encompass intra-firm social media announcements, casual interactions between subordinates and superiors, and other unenforced organizational guidance. Such communications are intended to be supportive of management objectives without the negative repercussions/associations of formal control (Dirsmith & Covaleski, 1985; Weisner, 2018). I contrast this approach with "conventional" management communications, namely standard, transactional directives devoid of any intended enculturation. Emblematic of informal controls, nonformal communication carries no economically measurable enforceability, and the traditional economic prediction posits that no subordinate, identified motivation or otherwise, would

be materially impacted by an implementation or change in such a control (Fehr & Fischbacher, 2004).

However, prior work demonstrates that minor variations amongst communication styles can evoke divergent contextual cues, which in turn differentially affect the salient features of firm values (Ajzen & Sexton, 1999; Crump, Vaquero, & Milliken, 2008). Drawing on the aforementioned theories, I propose that amotivated subordinates, absent of any strong views on the superior's objective, approach these unobservable tasks as a routine professional matter. When objectives are conventionally framed as a transactional directive, amotivated subordinates are more apt than identified motivation subordinates to comply with a superior's priorities because the nature of their task and the manner in which it is communicated easily align. Conversely, a nonformal communication approach may induce amotivated subordinates to deviate from the superior's goals. The flexible and collaborative nature of nonformal communication is of little value to an amotivated subordinate, and rather than engender stewardship behaviors, it may instead signal the superior's laxity over the objective. No longer relating to the task as a transactional matter, the amotivated subordinate may then disregard the superior's directive in favor of their own preferences/interests.

For the identified motivation subordinate, a conventional approach will be perceived as a controlling behavior (albeit devoid of economic consequences) and crowd-out their identified motivation with the objective. This crowd-out will reduce congruent and cooperative behaviors in turn. In contrast, a nonformal communication approach aligns the identified motivation subordinate with the superior by enculturing shared values and

emphasizing subordinate autonomy. This, in line with Stewardship Theory, may improve subordinate behaviors relative to a conventional approach.

Based on prior management accounting literature, I also test the spillover effects on subordinates' subsequent cooperation with the superior in an undirected task to measure the longer-term consequences of an informal control (Arnold, 2015; Coletti, Sedatole, & Towry, 2005; Garrett, Livingston, & Tayler, 2019). Given the multi-period nature of many superior/subordinate associations, a discussion of this topic would be incomplete without empirical analysis beyond the immediate influence of a control on subordinate behavior. By addressing spillover effects, the impact of a control regime can be either isolated as an ephemeral reaction or revealed as a stable, persistent determinant of subordinate behavior. As goal congruence is the primary dependent measure and I seek to capture a similar, but not redundant, spillover construct, I chose subsequent cooperation as the second variable of interest. By testing subsequent cooperation with the superior, it is possible to examine whether the use of an informal control generates any negative view of the superior (via observed, uncooperative behavior), and whether an initial effect is strong enough to persist into an alternate setting. To demonstrate that nonformal communications induce more than a fleeting response by the subordinate, I apply the same predictions to immediate and spillover effects: as compared to a conventional communication frame, nonformal communications will strengthen goal congruence *and* subsequent cooperation among identified motivation subordinates. But among amotivated subordinates, the use of a *conventional* communication frame will result in higher goal congruence and subsequent cooperation than nonformal communications.

I test my predictions in a two-stage protocol using a variant of the charity-modified dictator game and a common-pool game (Eckel & Grossman, 1996; List, 2007; Ostrom, 2006). In the experiment, participants form supervisor – employee groups (1 supervisor to 4 employees) where the supervisor chooses an endowment allocation recommendation to a pre-selected charitable organization. With minor variants in the wording, this choice is communicated via a stylized email to the employee either as a neutral, transactional directive (conventional communication frame) or a collaborative recommendation (nonformal communication frame). Critically, there is no formal monitoring or control enacted on the actual decision under either condition. The employee then allocates the endowment as they wish with an additional option to withdraw whatever percentage of the endowment (at a penalty) for personal payoff. In a subsequent common pool game devoid of any controls or communications, the employee allocates another endowment between themselves and their previously-paired supervisor. As dependent measures, I capture and analyze how much of the endowment the participant withdraws from the allocation task, how the participant's allocation to the charity deviates from the supervisor's directive/recommendation, and the amount withdrawn by the participant from the common pool game. The first two proxy for subordinate goal congruence, and the last one proxies for subsequent cooperation.

Results are supportive of my predictions on the dependent measures of allocation deviation and common pool withdrawals, and partially supportive of my predictions on allocation task withdrawals. Compared to a conventional frame, a nonformal communication approach increases goal congruence and subsequent cooperation among identified motivation participants without any material crowd-out. By comparison,

amotivated subordinates exhibit higher levels of goal congruence and subsequent cooperation than their identified motivation counterparts under a *conventional* communication frame, and those behaviors drop precipitously under a nonformal communication frame. Across all conditions and dependent variables, the use of an informal control *worsened* outcomes among amotivated participants compared to identified motivation participants.

This study contributes to the management control literature by providing evidence for the asymmetric effects of informal controls vis-à-vis innate subordinate preferences and motivations. Building on prior studies that examine the boundaries and conditions of informal controls like self-certification and organizational value statements, this study demonstrates that the efficacy of management-enacted informal controls can be dependent on subordinate identified motivation (Akinyele, Arnold, & Sutton, 2020; Ang & Cheng, 2016). Moreover, this study addresses the potential limitations and even backlash effects of informal controls. Contrary to the common expectations of informal controls, the evidence from this experiment reveals that an attempt to modify behavior via non-economically enforceable means can actually worsen results compared to informal controls' absence. This study also replicates prior findings on the benefits and hazards of recruiting identified motivation subordinates. Under the appropriate conditions where collaboration and autonomy are emphasized, such subordinates exhibit a significantly stronger level of positive behaviors compared to amotivated subordinates. Yet, even a neutral, transactional approach to subordinates with identified motivation can cause crowding out of said motivation and a stark deterioration in compliant behaviors. Finally,

the study demonstrates that some tenets of Stewardship Theory generalize to a mixed environment comprising subordinates of varying motivation levels.

My results have practical implications for the design and maintenance of management control systems for unobservable tasks. Due to their relatively lower cost of implementation and culturally adaptable flexibility, firms may be quick to rely on uniform informal controls for subordinates both with and without identified motivation. This study provides preliminary evidence that such an approach may be unintentionally sub-optimal. While informal controls improve goal congruence and cooperation among identified motivated subordinates without concerns of motivation crowd-out, they seemingly give license to amotivated subordinates for poor coordination and cooperation with the superior. This study provides some support for the selective implementation of control systems based on subordinate characteristics and the dangers of misaligned control regimes. Further studies may elucidate to what extent these findings generalize to other management-enacted (versus organic) informal controls.

CHAPTER 2. LITERATURE REVIEW & HYPOTHESES

2.1 Standard Agency Theory Approach

Where the preferences, priorities, and utility maximization functions of the archetype principal and agent diverge, they result in a seemingly intractable chasm between the parties known as an agency conflict[1]. Whether an agency conflict stems from a misspecified recruitment, dissimilar risk profiles, rent-seeking on private information, or contract incompleteness, mitigating measures are often (but not always) available to either party. Among other factors, standard Agency Theory is predicated on the presence of observable, measurable, and contractible metrics between a superior and subordinate (Baiman, 1990). Many common approaches in resolving agency conflicts emphasize these metrics, such as relative performance evaluation, audit regimes, participatory budgeting, and intra-firm financial reporting/disclosure (Bonner & Sprinkle, 2002; Kachelmeier & Williamson, 2010; Kelly, Presslee, & Webb, 2017). Along with narrowing information asymmetry between parties and curtailing the potential for misaligned incentives and malfeasance, these approaches utilize several extant accounting processes in the support of well-functioning principal/agent relationships.

However, in addition to standard observable tasks for which data are routinely collected and analyzed, many agents either partially or wholly engage in critical work functions that are difficult to contract for and, at best, only observable with time-lagged, noisy metrics. These functions may include mentoring of junior employees, cultivation of external relationships, research & development, pro-social efforts, and sustainability

[1] In this narrative, I will interchange "Principal" with "Superior" and "Agent" with "Subordinate" (respectively).

initiatives. And although some output, end-result components of these pursuits may be observed with temporally or conceptually distant proxies, their *inputs* are characteristically impractical or cost-ineffective to monitor. These can include metrics such as effort (in all its varieties), creativity, and honesty (Hannan, McPhee, Newman, & Tafkov, 2013; Speckbacher, 2017; Newman, 2014).

Assuming contract incompleteness and an inability to comprehensively observe subordinate behavior, standard agency conflicts are often ameliorated with a formal management control system (MCS). Such a system varies, but all formal MCS share some basic characteristics. They can be enforced with economically measurable consequences, they are intentionally designed as a means of subordinate monitoring, and they utilize information relevant to the controlled environment (Christ, 2013; Simons, 1987). Ranging from the simplicity of a supervisor-approved timesheet to the intricacy of real-time fraud detection, a formal MCS characteristically features a predictable and quantifiable outcome from non-compliance. Formal MCS can be tailored to a range of situations and structured as ex ante or ex post, individual-based or group-based, and bonus vs. penalty oriented (Christ, Emett, Summers, & Wood, 2012; Emett, Guymon, Tayler, & Young, 2019; Kuang & Moser, 2009). Formal MCS often manifest in the forms of audit regimes (Eulerich & Lakinichenko, 2018), budget authority assignments (Hannan, Rankin, & Towry, 2010), subjective performance evaluation[2] (Prendergast & Topel, 1993), and horizontal subordinate monitoring (Sedatole, Swaney, & Woods, 2016). But these options may not be available for the aforementioned, unobservable subordinate tasks. For those tasks, either

[2] This approach, a vast literature in itself, is often proposed as an alternative to informal control systems given unobservable behavior. However, it carries a much higher cost of administration, introduces various evaluation biases, and, if linked to compensation, risks crowding out identified motivation. For additional readings on this topic, see Bol & Smith, 2011, Chan et al., 2018, and J.P. Hao, 2020.

they occur entirely outside of a reliable and cost-effective monitoring schema or there is no universally agreed upon unit of measure by which to evaluate them. Without any widely recognized metrics or cost-effective enforcement mechanism for resolving agency conflicts in these tasks, superiors are unable to monitor and control subordinate behaviors and actions through traditional, formal MCS.

2.2 Preferential Subordinate Selection & Self-Determination Theory

Without the possibility of a formal control framework, many firms/superiors elect to preferentially select subordinates who exhibit goal congruence with the firm's objectives (Miller, 2011). This preferential subordinate selection[3] might target those with professional certifications or credentials, specialized abilities, or similar values/preferences to the superior (Abernethy, Dekker, & Schulz, 2015). The assumption is that these qualities and the resultant alignment between superior and subordinate priorities will mitigate the problematic divergence between cooperative and self-interested subordinate behavior (Campbell, 2012). In turn, this diminishes the need for formal monitoring and control. Proper selection of subordinates has also been shown to reduce downstream control costs or entirely obviate the need for such controls (Liu, Liu, & Chu, 2019). Social-mission organizations, not-for-profit firms, and certain government agencies are examples of sectors that value subordinates with such other-regarding preferences (Chen, Pesach, & Wang, 2020; van Loon, Baekgaard, & Moynihan, 2020; Chan & Zhang, 2019). While prior literature compares selection of better qualified vs. more engaged subordinates (Grabner, Posch, & Wabnegg, 2018; Abernethy, Dekker, & Schulz, 2015), this study focuses on those

[3] Also referred to in the literature as "employee selection." I use "subordinate selection" for the sake of simplicity and conformity with other constructs used in the narrative.

subordinates with an innate motivation towards the firm's objective. To better understand the variant motivational archetypes for such preferentially selected subordinates, I utilize the framework of Self-Determination Theory (SDT).

SDT departs from prior theoretical work on personal motivation by categorizing motivation into distinct types rather than focusing solely on the presence/absence and valance of motivation towards a given objective/task. Originally framed as a contrast between "mindless" and "mindful" decisions and their antecedents (Deci & Ryan, 1980), the theory evolved to differentiate between three broad categories of motivation: amotivation, controlled motivation, and autonomous motivation. The first denotes a lack of motivation, the second describes externally regulated motivation, and the third a personally derived motivation. Controlled (also referred to as "extrinsic") motivation is driven by exogenous factor(s), typically in the forms of positive and negative consequences for resultant behaviors. While controlled motivation is not inherently undesirable or ill-suited for common circumstances, autonomous motivation is thought to be the strongest and most impactful type as it activates the highest order fulfillment of internal drive and volition. Prior work also finds that autonomous motivation is most pronounced with three key assumptions that fulfill basic psychological needs: competence, relatedness, and autonomy (Burton, Lydon, D'Alessandro, & Koestner, 2006). In addition to several studies in the accounting literature concerning subordinate behavior, this theory has been generalized into a diverse range of environments such as education, healthcare, and other professional relationships (Deci & Ryan, 2008).

Prior accounting literature establishes the dominance of autonomous motivation over controlled motivation vis-à-vis long-term performance, effort, and other financial

matters of interest (Lukka & Pfister, 2019; Stone, Bryant, & Wier, 2010; Kunz & Pfaff, 2002). Autonomous motivation is further bifurcated by SDT into two constructs: intrinsic vs. identified motivation. Intrinsic motivation, often used in the accounting literature, describes a behavior or activity that is enjoyable or rewarding. Identified motivation is broadly defined as a person's belief that an action or behavior is inherently worthwhile, valuable, and efficacious (Burton, Lydon, D'Alessandro, & Koestner, 2006). Through the example of exercise, those with controlled motivation exercise due to doctor's orders, the intrinsically motivated exercise for fun regardless of health benefits, and those with identified motivation exercise because they genuinely believe it will maintain their health. In the managerial accounting context, the last construct of identified motivation better generalizes to subordinates motivated to engage in unobservable, professional tasks. Despite a subordinate's inclination towards certain professional tasks, such tasks cannot be readily construed as "enjoyable" in the manner originally intended by SDT. Departing from prior accounting literature that relied on the connection between *intrinsic* motivation and "enjoyable" tasks, I instead utilize the construct of identified motivation and the emphasis on value-connection. A similar approach has been used in more recent accounting studies focused on management control systems (Chen, Lill, & Vance, 2020; Cockrell, Stone, & Wier, 2018; Chen, Pesach, & Wang, 2020).

2.3 Identified Motivation Subordinates: Scarcity & Crowding Out

Although the preferential selection of identified motivation subordinates appears to be a workable solution to the agency conflicts inherent in unobservable tasks, there are two potential drawbacks. The first is the relative dearth of identified motivation subordinates in the labor pool. Prior studies demonstrate the wide identified motivation variance among

different subordinate measures like age and education level (Lord & Farrington, 2006), and recurring surveys of workers (in the USA) show that engaged/motivated employees comprise less than a third of all workers (Harter, 2018). Very few firms can exclusively depend on identified motivation subordinates, and the typical firm will likely comprise subordinates of different identified motivation levels or perhaps no motivation at all.

The second drawback of preferentially selecting identified motivation subordinates concerns their reactions to extrinsic controls. In the event that a contract shares observable and non-observable tasks, or in the event that previously unobservable tasks gain contractible metrics, a formal MCS may still be applicable to identified motivation subordinates. This formal MCS would readily constitute an extrinsic motivation for behavior. Much literature has addressed the ramifications of motivation crowd-out from extrinsic control, including diminished honesty in budget reporting, decreased pro-sociality, and weakened peer cooperation (Wong-on-Wing, Guo, & Lui, 2010; Park, 2016; Garrett, Holderness Jr., & Olsen, 2020). Other studies isolate the secondary effects of extrinsic control system implementation, such as a perceived lack of trust by the superior and a detraction from the positive effects of social norms (Heinle, Hofmann, & Kunz, 2012; Donnelly, Kennedy, & Widener, 2021; Garrett, Livingston, & Tayler, 2019). Although the extant literature recognizes the effectiveness of formal MCS, the harm to identified motivation from extrinsic control/motivation obviates the very purpose of selecting subordinates with identified motivation.

The evidence and arguments above posit that, for unobservable tasks, firms cannot rely on formal MCS procedures, preferential subordinate selection, or some combination thereof. Even if contractible metrics are available, the use of a formal MCS has been shown

to crowd out the positive behaviors of those with identified motivation. In addition, firms cannot entirely utilize preferential selection of subordinates with identified motivation due to their relative scarcity in the labor pool. Given these constraints, I propose informal control systems as a potential solution.

2.4 Informal Management Control Systems & Stewardship Theory

The distinction between formal and informal management control systems is elusive and often utilized in the literature without explicit definition. Some simply contrast the economic vs. non-economic effects of formal vs. informal systems, respectively, and treat the various informal control system approaches as fairly interchangeable. Others approach certain informal controls as materially distinct from others without consideration of the underlying similarities. In short, informal controls are a blend of socio-cultural norms, firm/industry customs, and self-restraint (Tucker, 2019). Although they do indeed lack economically measurable enforceability, they have tangible economic impact by the potential to improve firm outcomes (Altenburger, 2017). Unlike formal MCS, informal controls do not require the explicit inclusion of measurable and contractible metrics. Formal MCS are inherently intentional and deliberately enacted by the superior, but informal MCS can be of either organic evolution among subordinates or purposely promulgated by the superior (Tucker, 2019).

Some examples of informal controls that have been experimentally tested in the accounting literature are activation of social norms (Cardinaels & Yin, 2015), ethical self-certification (Ang & Cheng, 2016), peer-group influences (Nikias, 2019), and the reliance on superior-subordinate trust (Libby & Lindsay, 2019). Critically, since informal MCS do not involve monitoring, expected economic value, or contractible metrics, they do not

constitute "extrinsic control," and therefore do not crowd-out identified motivation (Reeson & Tisdell, 2008; Falk & Kosfeld, 2006). A secondary benefit of monitoring's absence is the lower cost and ease of implementation compared to formal MCS (Brown, Sprinkle, & Way, 2021). Assuming that the use of informal controls addresses both the lack of formal MCS for unobservable tasks and the difficulty in recruiting identified motivation subordinates, the next step is to ascertain which informal control may be well-specified for this setting.

While many informal MCS could be readily applicable to unobservable tasks, Stewardship Theory provides a relatable context for finding an easily implemented option. Often touted as the complement of standard Agency Theory and its prototypical parties of pure self-interest, Stewardship Theory is an alternative framework for the psychological, situational, and cultural mechanisms that foment pro-organizational, cooperative subordinate behaviors. Stewardship Theory is centered around a collaboration-based relationship rather than the control-based relationship of Agency Theory, and seeks to promote longer-term, multi-stakeholder welfare (Davis, Frankforter, Vollrath, & Hill, 2007). Complementary to the arms-length and divergent preferences assumptions of Agency Theory, Stewardship Theory proposes that environments are most conducive to maximization of firm utility where the subordinate is autonomously motivated, team-oriented, and dedicated to the mission (Hernandez, 2012). Among other psychological antecedents of behavior, Stewardship Theory provides a structure for inducing commitment by emphasizing psychological needs, low power distance, and delegation of authority. However, Stewardship Theory recognizes that there will still be environments where the traditional approach will be most suitable, and some prior literature recommends

a continuum of management approaches between Agency & Stewardship theories rather than a binary choice (Hernandez, 2012). Thus, a Stewardship approach may be well-suited for firms that hire subordinates both with and without identified motivation for tasks with no observable/measurable metrics (Puyvelde, Caers, Du Bois, & Jegers, 2012).

Similar to SDT, Stewardship Theory stresses the need for subordinate autonomy and the importance of granting subordinate discretion for steward-like behavior (Davis, Schoorman, & Donaldson, 1997). The theory also makes specific mention of subordinate autonomous motivation towards the superior's objectives as a key factor in promoting collaboration and goal congruence. While many approaches may be well-specified in this context, I chose to test "nonformal communication" as an informal control for this setting of unobservable input tasks. Nonformal communications is a broad reflection of how a firm conveys non-binding directives to subordinates, and can manifest in a wide range of approaches. Whether by unenforced guidance, ad hoc supervisor advice, or even novel communication channels such as intra-firm social media networks, nonformal communications are intended to bolster organizational values and culture (Dirsmith & Covaleski, 1985; Weisner, 2018). Reflective of the dialectics between Agency and Stewardship Theories, such communications may be structured to emphasize chain of command versus teamwork, innovation versus historical practice, risk-seeking versus risk-aversion, and many other defining characteristics of either approach (Davis, Schoorman, & Donaldson, 1997). The proposed informal control I test contrasts a conventional vs. nonformal communication frame[4]. In an attempt to mirror the contrast between Agency and Stewardship Theories, the former reflects a transactional, hierarchical, power-based

[4] A similar approach using "Communicated Values" was utilized in Kachelmeier, Thornock, & Williamson, 2016

relationship between superiors and subordinates, and the latter a more empowering, risk-tolerant, and low-distance relationship[5]. Each framing reflects managerial attitudes and communications that can occur at all organizational levels and across sectors, and it fulfills the criteria of an informal control as mentioned above.

A conjunction of SDT and Stewardship Theory forms a relatively straightforward prediction for the identified motivation subordinate. Under a conventional frame, bereft of any collaborative or empowering guidance from the superior, an objective is transmitted to the subordinate as an ordinary, transactional directive. Even devoid of any economically enforceable consequences to goal incongruence, I predict that there will still be observed crowding-out of motivation due to a perceived lack of autonomy and absence of shared goals. This stifling of motivation will in turn promote maladaptive subordinate behaviors and induce the subordinate to deviate from the superior's priorities. However, the opposite may occur with the use of nonformal communications. By emphasizing the subordinate's autonomy, enculturing the subordinate to firm values in a collaborative manner, and framing the task as one of shared interest, the subordinate's identified motivation will be supported. In tandem with the psychological antecedents specified by Stewardship Theory, such an approach will lead to increased subordinate goal congruence with the superior's objectives.

For the amotivated subordinate, I predict that conventional framing will actually yield more goal congruence than a nonformal communications approach. This prediction is rooted in the Stewardship Theory tenets of subordinate autonomous motivation and

[5] I use conventional framing language that mimics a standard agency approach as a baseline for comparison to nonformal communications. While such a framing would invariably be backed by a formal MCS *in vivo*, both experimental conditions are devoid of formal MCS characteristics to prevent issues of compound manipulation.

identification with the objective. Absent any connection to the welfare of external stakeholders or the broader goals of the superior, the amotivated subordinate arguably has no potential to connect to the task in any manner of stewardship. Regardless of the superior's preferences, to the amotivated subordinate, the task is and remains an economic transaction to be executed in line with standard professional conventions. Thus, a communication that aligns with conventional superior/subordinate norms will align with the transactional nature of the task and prompt the amotivated subordinate to comply. Conversely, the introduction of collaborative and autonomy-activating language might only discount the superior's preferences rather than strengthen them in the eyes of the amotivated subordinate. While a superior invoking elements of empowerment and collective responsibility is well-suited for identified motivation subordinates, the amotivated subordinate may instead perceive it as too divergent from the typical economic transaction and indeed a sign of laxity or weak preferences. I therefore suggest that the superior will only discourage goal congruence among amotivated subordinates when utilizing nonformal communications, and that a conventional approach instead yields superior outcomes.

> *H1 – For an unobservable task, identified motivation (amotivated) subordinates will exhibit higher (lower) levels of goal congruence with superiors' nonformal communication than with superiors' conventional communication. The opposite pattern of goal congruence will occur under conventional communication.*

Ideally, the benefits of an informal MCS would persist beyond limited, short-term effects on subordinate behavior and into other settings devoid of the control approach.

Given the multi-period nature of most professional relationships and system implementations, an effective (formal or informal) MCS must demonstrate efficacy beyond short-term effects, and spill over into subsequent interactions and dissimilar environments. Should the effects of nonformal communications be only a transient reaction rather than a persistent change in subordinate behavior, their use and appropriateness for practice would be limited. If subordinates engage in a mix of task environments as previously proposed, MCS effects on unobservable tasks may not necessarily carry over into other tasks. And if the prior hypothesized effects for a given control's usage on specific groups are present in the short run, it is tenable that those effects would persist even after the control approach is no longer present. To proxy for this and for a broader view into how subordinate reactions/views spill over into other matters, I extend these predictions onto a subsequent, uncontrolled, cooperation task devoid of any communication from the superior.

I test cooperative subordinate behaviors because they can provide insight into how the subordinate perceived and reacted to the control. Cooperation is also a reliable measure of reciprocity between subordinate and superior. Prior research explores how the very choice of a control system is often regarded by the subordinate as an extension of the superior's own views towards said subordinate (Brink, Coats, & Rankin, 2018; Zhang, 2008). And subsequent cooperative/uncooperative behavior on an uncontrolled task is widely utilized as a proxy for the likelihood of positive/negative reciprocity between the parties (Davidson, 2019; Hesford, Mangin, & Pizzini, 2020; Fisher, Peffer, Sprinkle, & Williamson 2015). Where subordinates (of any motivation level) recognize a control system as well-specified for themselves/their environment, and assuming the control is in some way attributable to the superior, subsequent cooperative behaviors are indicative of

a desire to reciprocate positively towards the superior in future interactions. This task also allows for the spillover effects of a given control approach to be observed in a different environment. Distinct from the goal congruence of the allocation task, measuring cooperation provides more insight into how the subordinate perceives the control itself rather than the specific directive/recommendation of the superior. Similar approaches have been used in recent accounting studies on the effects of formal MCS on team collaboration (Coletti, Sedatole, & Towry, 2005), the transitions between informal and formal control systems (Tayler & Bloomfield, 2011), the perceptions of extrinsic controls on coordination (Garrett, Livingston, & Tayler, 2019), and peer effects on norm "stickiness" (Emett, Guymon, Tayler, & Young, 2019). Based on standard economic theory and absent any formal control, a subordinate has no incentive to cooperate when given the opportunity to make a wholly self-interested decision. However, I extend the pattern of predictions outlined vis-à-vis goal congruence into cooperation as well.

For identified motivation subordinates, I predict that just as a nonformal communication frame recasts a transaction to a shared decision, this heightened connection between the subordinate and superior will persist into subsequent tasks without any additional directives or communications. However, the crowd-out expected from a conventional framing will also persist into subsequent interactions and result in diminished cooperation. Conversely for amotivated subordinates, just as the mismatch of nonformal communications with standard economic transactions will only reinforce laxity and deviation from superior directives, so too will such subordinates favor their own interests over those of the superior when subsequently given the opportunity to so. For a conventional frame, I predict that the proper alignment of superior directives with the

nature of an economic transaction will also inform the subsequent task, and amotivated subordinates will cooperate more than with nonformal communications.

> *H2 –Identified motivation (amotivated) subordinates will exhibit higher (lower) levels of subsequent cooperation after an unobserved task guided by superiors' nonformal communication than with superiors' conventional communication. The opposite level of subsequent cooperation will occur under conventional communication on the prior task.*

CHAPTER 3. EXPERIMENTAL METHODS & PROCEDURES

3.1 Participants & Recruitment

As this study seeks to generalize to the standard subordinate/superior relationship, no specialized participant pool was selected (Kachelmeier & King, 2002; Libby, Bloomfield, & Nelson, 2002). Three hundred and forty participants were recruited through the Prolific experimental platform, of which 57% were female and 43% were male. The average participant age was approximately 32 years old, and the participants had an average of 9.5 years' professional experience. Several papers have examined the use of online experiments and found them to be a suitable proxy for studies requiring no advanced knowledge or skill (Farrell, Grenier, & Leiby, 2017; Peer, Brandimarte, Samat, & Acquisti, 2017; Palan & Schitter, 2018; Owens & Hawkins, 2018). The study was pre-screened for individuals at 18 years of age or above, fluent in English, and residing in the United States of America. The protocol was approved by the Institute's Institutional Review Board.

3.2 Instrument & Procedures

The sessions were double-blind and did not use deception, and the instrument was programmed using the oTree platform (Chen, Schonger, & Wickens, 2016) with the oTreeutils add-on package (Konrad, 2019). Participants first completed a series of pre-experimental questionnaires and a filler task, both for the purposes of a pre-manipulation IV measurement without any salience to the participant. After reviewing the consent form and agreeing to proceed, participants were first asked to rate their passion towards various charity sectors. A randomized listing of charitable sectors was presented, including the one

involved in the study. Participants then completed a survey regarding various other social/political views and were directed to a filler task. The filler task was a review of different French Fry varieties, chosen for its benign content and ability to distract from any potential gleaning of the pre-experimental questionnaire's purpose[6]. Aside from a single charity sector rating from the first questionnaire page, all other responses were disregarded. After reviewing the filler task information and answering two "dummy" attention check questions on the materials, participants were directed to the main experiment.

In a charity-modified dictator game (Eckel & Grossman, 1996), four employees are paired with a supervisor in a one-shot setting. The supervisor participant was first directed to choose from a listing of possible endowment allocations to a not-for-profit in the animal advocacy sector[7]. The supervisor was informed that this choice would then be communicated to other participants in the experiment for execution. To ensure the eventual allocations were robust to a diversity of recommendations, I varied the (pre-set) purpose allocation options available to the supervisor. Every choice contained some combination of administrative, fundraising, and two specific program options. This was done to create some tension for the employee participant – it is uncommon to designate charitable allocations for administrative and fundraising purposes. Had the instructions allocated a material share of the endowment to programs alone, it would likely face little pushback from employee participants. Once the supervisor selected an option, they completed basic demographic post experiment questionnaires (PEQs), were informed of the charity's

[6] A 45-second "Next" button delay was enacted on this task to ensure participants reviewed the information.

[7] A separate survey was conducted before experimental sessions began to identify, from a list of several sectors, which one was the least controversial while still eliciting a wide variability of passion/motivation. The animal advocacy sector was identified, and the **World Wildlife Fund for Nature** selected due to its prominence and record of financial stability.

identity and the experimental dollar to USD conversion rate (4000 E.D.: $1), and ended their study.

Employee participants were prompted to assume the role of a mid-sized firm's department manager tasked with distributing community engagement funds. After reading instructions, they reviewed a generic/stylized email from the firm's "CEO" (the paired supervisor participant in the study) with a message to allocate the endowment per the CEO's directive. To manipulate nonformal communication, the email was written in either a business-like, instructive tone (conventional frame) or a collaborative and discretionary tone (nonformal frame). These wording choices (both versions are available in Appendix B) are the only manipulated, independent variable in the study. After reading the email[8], the employee participant was directed to an input screen where they allocated a 5000 experimental dollar endowment between administrative, fundraising, and the two specific program options by percentage. The employee participant was also permitted to withdraw the entire endowment or any percentage thereof at a 50% penalty. This withdrawal percentage is one of two dependent measures that proxy for subordinate goal congruence.

After deciding on the allocation, the employee participant was directed to play a modified common pool game with another 5000 experimental dollar endowment (Ostrom, 2006). Free of any instruction or other communication from the superior, the employee participants were allowed to withdraw up to and including the entire amount, but whatever amount was left in the pool would be multiplied by 1.6 and evenly divided between the

[8] As an experimental control, the "Next" button was hidden for 20 seconds after the email page loaded. This was explained to the participant beforehand, and ensured that the participant had ample time to review the email and prevented spurious advances through the instrument.

employee participant and the associated supervisor participant[9]. After this decision, the employee participants completed PEQs, were informed of the charity's identity and the experimental dollar to USD conversion rate, given a payoff summary, and ended their study. PEQs included demographics, written responses to explain their allocation decisions, an attention check to confirm they were aware of the option to withdraw funds from the first allocation task at a 50% reduction, and ratings on their impressions of the email they viewed. The average compensation with bonus payments was approximately $1.43 for an average completion time of approximately 10 minutes (average hourly rate ~$8.50). All payments were processed to participants within four business days of each session, and $267 (rounded up) was raised and remitted to the charitable organization.

3.3 Independent Variables

To manipulate the independent variable of "Communication Frame," I varied the language used in the stylized email received by employee participants. For the conventional communication condition, the email tone was formal and instructive. For the nonformal communication condition, the email text emphasized collaboration and autonomy. Sample texts of the emails, allocations, and other experimental materials are provided in Appendix B. To capture the measured IV of "Identified Motivation," all participants were asked in the PEQ to rate their passion for the animal rights sector on a 9-point scale [-4, +4] where -4 represented "None at All" and +4 reflected "Very passionate."

As identified motivation towards animal rights is a personality trait rather than a cognitive state and is therefore less susceptible to momentary influence, obtaining this

[9] The common pool game parameters were chosen so that cooperation would *always* diminish the employee participant's payoff, thereby biasing against predictions and preventing spurious cooperative behaviors.

measure directly after experimental manipulations does not materially impair validity. (Baumeister, 2014; Robins, Fraley, & Krueger, 2007). In order to categorize participants for the purposes of analysis, I first compared the average *pre*-experiment questionnaire response regarding the animal rights sector to the average *post*-experiment questionnaire response. In support of the PEQ rating NOT being affected by the experiment/manipulations, the two ratings were materially aligned with a Cronbach's Alpha of 0.914. Due to severe between-cell sample size imbalance when using the pre-test rating, I rely on the PEQ rating for assigning participants into the measured IV categories. Based on a percentile partitioning of the scores, the 10% lower-most and 10% upper-most ratings were used to assign responses to amotivated and identified motivation categories, respectively. The lower bound range was a response between -4 and 0 (inclusive) and the upper bound range was a score of 4. The 10% lowest and 10% highest ranges were used in order to ensure a strong difference between participant motivation levels and a clearer proxy for how amotivated vs. identified motivation subordinates handle management directives. Because of the previously mentioned, between-cell sample size imbalance, the results described below are not observed when using the pre-test rating[10].

3.4 Dependent Measures & PEQs

To proxy for the dependent variable of "subordinate goal congruence," two measures from the experiment were taken. One measure is the penalized endowment withdrawal from the allocation task, and the other is a deviation score. The endowment withdrawal both proxies for a subordinate's self-interested economic decisions and ensures

[10]The pre-test featured a 7-point Likert scale whereas the PEQ utilized a 9-point Likert scale. This is potentially the source of ANOVA cell imbalances when assigning based on pre-test ratings.

that the choices made in the experiment were truly indicative of the participant's preferences. The value is a percentage ranging from 0 (no withdrawal) to 100 (total amount withdrawn). The deviation score measures how closely an employee's chosen allocation matched the CEO's suggested allocation. This score is calculated first by summing the absolute value of the employee's choice less the CEO's choice for each of the four potential allocation options. That difference was then divided by the CEO's choice, and the four scores were combined into a final score. The value ranges from 0 to 4, with 0 representing an employee exactly matching the CEO's recommendation and 4 representing total disregard (usually in the form of withdrawing the entire endowment from the experiment at a penalty). A higher penalized endowment withdrawal and a higher deviation score proxy for diminished goal congruence with the superior. To measure subsequent cooperation, I used the employee participant's withdrawal amount from the modified common-pool game. This value again ranges from 0 to 5000. A higher withdrawal indicates a lower level of cooperation with the superior.

The PEQs differed by condition, with fewer fields collected for the CEO role. All participants provided their gender, age, ethnic identification, years of professional experience, and years of professional experience in the financial sector. Employee role participants also provided a 2nd rating (in addition to the pre-test) of their passion towards the animal rights sector, an attention check of whether or not they were permitted to withdraw funds at a penalty during the first task, ratings regarding the empowering and collaborative nature of the email, and an open-ended written response on why they allocated the first endowment as they chose[11].

[11] While these responses were mainly used to validate the attention check, they contain many insights for future analysis on subordinate responses, preferences, and reactions to the management environment.

CHAPTER 4. RESULTS & ANALYSIS

4.1 Data Exclusions & Final Sample Construction

From a total participant pool of 340, 6 participants' data were excluded for incompleteness. Of the remaining 334, 71 were supervisor roles and 263 employee roles[12]. As the dependent measures are derived from the employee role, the 71 supervisor participants were excluded for the purposes of data analysis. From the 263 employee role participants, 24 failed the attention check mentioned below, yielding a total eligible sample size of 239. After partitioning the sample into amotivated vs. identified motivation based on a percentile split of PEQ responses, a final sample of 109 participants remained for analysis. Further information on dependent measure characteristics and test assumption violations will be discussed on a variable-by-variable basis.

4.2 Manipulation & Attention Checks

To ensure the manipulation of communication frame was successfully perceived by participants, employee participants were asked to provide two post-experimental 9-point Likert scale ratings about the tone of the email they read. The first rating asked "*On the following scale between controlling and empowering, what was the tone of the message you received from the CEO?*" The second rating asked "*On the following scale between instructive and collaborative, how did you perceive the message from the CEO?*" An untabulated one-way ANOVA was run on these ratings by communication condition and

[12] The ratio of supervisor to employee participants is not exactly 1:4 due to uneven data exclusion and timing differences in when participants began the experiment (e.g., if a supervisor role began immediately before the session's termination).

found to be statistically significant (Q1 $F_{1,93}$=6.834, p=0.010, Q2 $F_{1,93}$=9.864, p=0.002), indicating that the manipulation of nonformal communication was correctly perceived by participants[13]. Participants in either communication condition were also asked "*In the first allocation you made (based on the CEO's recommendation), were you given the option to withdraw monies from the task at a 50% reduction/penalty?*" as an attention check. Of the 263 participants in the employee role, 24 failed this attention check and their data were excluded from analysis[14]. As mentioned above, participants were assigned to either the "Amotivated" or "Identified Motivation" group based on a percentile split of their PEQ rating of passion towards the animal rights sector.

Using the aforementioned independent and dependent variables, an (untabulated) Multivariate Analysis of Covariance (MANCOVA) was performed using gender, age, professional experience, financial sector experience, and racial background as covariates on all main effects and interactions with no statistical significance of the covariates or change in the significance of the findings below.

4.3 Review of Hypothesis #1 Results – Subordinate Goal Congruence

Hypothesis 1 predicts that, among identified motivation (amotivated) subordinates, nonformal communications will elicit higher (lower) goal congruence with superiors vs. conventionally framed communications. The mean values represent the percentage of the allocation endowment extracted by participants (at a penalty) for their own payoff. In the

[13] The differences in degrees of freedom between the manipulation checks and the main sample are due to some non-responses in the PEQs.

[14] If those that failed attention checks are included, the results remain unchanged except for the interaction of communication frame and identified motivation on the allocation task withdrawal – this is NOT statistically significant under a limited sample, but does demonstrate significance with attention check failures included.

first of three univariate analyses, this hypothesis was not observed in a 2x2 ANOVA[15] on the dependent measure of Allocation Task Withdrawal. Against predictions, as seen here in Figure 1, no statistically significant interaction of communication frame and identified motivation was observed on allocation task withdrawal ($F_{1,105}$=2.366, p=0.127)[16].

- Insert Figure 1 Here -

Although the amotivated subordinate group's average allocation task withdrawal was slightly higher than that of the identified motivation group, this was statistically insignificant and the communication frame had no impact on this metric of subordinate goal congruence. From Table 1, for amotivated participants, the average allocation task withdrawal was 24.86 under a conventional frame and 37.78 under a nonformal frame (simple main effect $F_{1,105}$=4.592, p=0.034). Among participants with identified motivation, the average allocation task withdrawal under a conventional frame was 20.59, and 15.78 under a nonformal frame (simple main effect $F_{1,105}$=0.614, p=0.435). This demonstrates that, relative to identified motivation subordinates, the use of an informal control for amotivated subordinates actually *worsened* maladaptive behaviors. Per Table 2, no other statistically significant effect of communication frame was observed on any dependent variable.

- Insert Tables 1 and 2 Here -

[15] For confirmation, the two dependent measures that proxy for goal congruence were analyzed jointly using a MANOVA approach. The results were unchanged from a univariate approach on either variable. Moreover, given several MANOVA assumption violations present in the dataset, such an approach may not be well-specified.

[16] All reported tests are two-tailed with a critical p-level of 0.05.

Though not explicitly predicted, a main effect of Identified Motivation was observed on allocation task withdrawal ($F_{1,105}$=5.190, p=0.025). Per Table 1, the mean withdrawal score was 31.20 for amotivated subordinates and 18.19 for identified motivation subordinates. This provides confirmatory evidence for the general advantage of preferentially recruiting identified motivation subordinates and their heightened goal congruence with superiors.

Among the three analyses, this ANOVA of allocation task withdrawal suffers from multiple violations of test assumptions. In addition to an absence of dependent measure normality, a Breusch Pagan Test for Heteroskedasticity was statistically significant at χ^2=11.215, p=0.001. This indicates a violation of the homoscedasticity assumption. Finally, based on the median and using adjusted degrees of freedom, Levene's Test of Error Variances Equality was statistically significant at W=3.412, p=0.021. To attempt a correction for these violations, the dependent measure data for allocation task withdrawal were rank transformed into a new variable and re-analyzed. In an untabulated analysis, this transformation resolved the assumption violations but yielded no significant results other than a marginally significant main effect of identified motivation ($F_{1,105}$=2.990, p=0.087).

Results in line with predictions were observed for the deviation score, as seen below in Figure 2. A statistically significant interaction was observed for communication frame vs. identified motivation on the deviation score ($F_{1,105}$=4.256, p=0.042).

- Insert Figure 2 Here-

Per Table 3, for the amotivated participants, a conventional frame yielded an average deviation score of 1.061 vs. 1.732 for a nonformal frame (simple main effect $F_{1,105}$=6.498, 0.012). For identified motivation participants, the opposite pattern of mean

was observed between the two communication frames. Under a conventional frame, the mean was 1.543 and the mean under a nonformal frame was 1.252 (simple main effect $F_{1,105}$=0.880, p=0.350. As displayed in the ANOVA output of Table 4, there were no statistically significant main effects of either frame or motivation level, per predictions.

- Insert Tables 3 & 4 Here-

Notwithstanding the various ANOVA assumption violations on the allocation task score data and the (likely associated) lack of statistically significant results in line with predictions, there are still valuable insights in these responses. The divergence of results between the two dependent measures for goal congruence may be informative as to the deeper differences between the two groups. Whereas the withdrawal share proxies for a subordinate's desire to wholly depart from the superior's goal for personal goal/payoff instead, the deviation score addresses how the task-specific preferences of the subordinate depart from the superior's. It is tenable that the proposed informal control is effective in aligning superior and subordinate preferences, but not strong enough to diminish maladaptive subordinate behaviors. Further analysis/data collection may be warranted to examine why informal controls dissimilarly affected these measures.

4.4 Review of Hypothesis #2 Results – Subsequent Cooperation

The second hypothesis also predicts the asymmetric effects of nonformal communication on identified motivation level, but instead uses the common pool game withdrawals as a proxy for a subordinate's subsequent cooperation with the superior in an undirected task. The lower the mean value, the more funds were shared by the participant with the superior. Once again, the asymmetric effects on identified motivation levels are

observed with a statistically significant, disordinal interaction in Figure 3 between communication frame and identified motivation level ($F_{1,105}$=7.342, p=0.008). Per the ANOVA in Table 6 below. No statistically significant main effect on common pool withdrawals was observed for either identified motivation or communication frame. This confirms that either category of subordinates' subsequent cooperation is at best weakly affected by either conventional or nonformal communication.

- Insert Figure 3 Here -

As seen in Table 5, average common pool withdrawals of amotivated participants were 1,429 experimental dollars under a conventional frame and 2,426 under a nonformal frame (simple main effect $F_{1,105}$=3.609, p=0.060). Indeed, nonformal communications had the surprising effect of worsening subsequent cooperation among amotivated participants. In contrast, those with identified motivation, on average, withdrew 2,444 under a conventional frame and 1,614 under a nonformal frame (simple main effect $F_{1,105}$=4.497, p=0.036). In line with the parameters of Stewardship Theory and identified motivation crowd-out, those with identified motivation towards the task likely interpreted the conventional framing as limiting their autonomy and as the superior adopting a transactional rather than collaboration approach. This demonstrates that the highest respective levels of cooperative behavior for either group are dependent on the use of informal controls.

- Insert Tables 5 & 6 Here -

CHAPTER 5. CONCLUSION

Given the limitations of both formal management control systems and the preferential selection of subordinates with identified motivation towards an unobservable task, I use experimental methods to investigate the asymmetric effects and suitability of informal control systems in this environment. By testing nonformal versus conventional communications and measuring subordinate goal congruence and subsequent cooperation with a superior in an undirected task, I observe that subordinates' reactions to informal controls can be a function of their innate preferences and identified motivation. Those with little to no identified motivation towards the superior's objective exhibited more congruous and cooperative behavior under conventional, transactional management communication. Conversely, individuals with high levels of identified motivation demonstrated heightened maladaptive behaviors under conventional conditions, and were best aligned with the superior's objectives under a nonformal, collaborative management communication approach.

This study provides evidence that the framework of identified motivation under Self-Determination Theory generalizes to an unobservable task environment, and that elements of Stewardship Theory manifest in the accounting realm of resource allocation. By selectively utilizing an informal control regime that emphasizes collaboration and autonomy, superiors can improve subordinate decisions without costly formal controls or risks of crowding out subordinates' identified motivation. This study also provided some support for the potential unintended consequences of informal control usage and the

associated risks of giving certain types of subordinates too much autonomy or authority in unobservable tasks.

Within the realm of informal controls, this study also advances the effectiveness of internal controls that do not organically evolve. Unlike the common examples of social norms, clan controls, and organizational culture, which cannot be easily implemented or manipulated by the superior, the use of nonformal communications is another option for management to align subordinate with firm objectives without the costs, implications, or drawbacks of formal MCS. Included in this category of intentional, informal MCS are the similar approaches of establishing codes of ethics and promulgating firm value statements.

As with all experimental approaches, there are limits to the generalizability of these findings and some caveats to their applicability to practice. Similar to other protocols conducted using an online participant pool, some design choices were implemented to accommodate a shorter data collection window and diminished experimental control. Had a laboratory setting or a traditional participant pool been available, the pre-test would have been conducted at least a week prior to and independently of the main session. This would have allowed for main experiment administration to only those participants at the upper and lower bounds of identified motivation for the animal rights sector, and therefore fewer discarded/omitted data from analysis. Moreover, while PEQ responses confirm that the instructions and manipulations were effectively executed, the entire protocol was kept intentionally simplified both to ward against compound manipulations and, more acutely, to remedy the limited attention span of online experiment participants. It is tenable that an increase in the instructions/details and mundane realism of the study would sway the participants in their responses and perceptions of the task.

The setting intentionally abstracts away from a more realistic, multi-task setting common to many subordinates in order to obtain a clear, causal connection between nonformal communication and subordinate decisions. The study also does not currently generalize to environments where the subordinate simultaneously engages in observable tasks for which a formal MCS is available. Future expansions of these results could introduce a controlled task in tandem with the unobservable allocations to further delineate the effects of nonformal communications. Moreover, the experiment was designed to be easily executed and relatable to those in the general population, and did not necessitate the expertise or higher-order reasoning skills that many identified motivation subordinates use in their professions and unobservable tasks. While the results from the general population sample do not negate or minimize the contributions of this study, a more specialized participant pool may enhance the generalizability of the theoretical underpinnings.

The results of this study offer several avenues for future testing and exploration. Within the usage of nonformal controls, additional trials can utilize an alternate entity type setting rather than the not-for-profit setting used in this study. Additional testing to reflect the standard for-profit or even a government setting in the instrument can strengthen the applicability of the control's usage. Similar experiments involving other organic informal controls, such as social norm activation and "clan control," are the logical next steps: this would achieve convergent validity between variants of controls in practice. And given the prevalence of such research in the managerial sphere, additional experiments can shift from allocation tasks to effortful or creative tasks. This, coupled with the aforementioned introduction of controlled tasks and specialized participants, may more strongly proxy for the complexity of unobservable tasks in a prototypical professional setting.

APPENDIX A. SUPPORTING STATISTICAL FIGURES & TABLES

Figure 1 - Pattern of Results + Predictions: Allocation Task Withdrawal

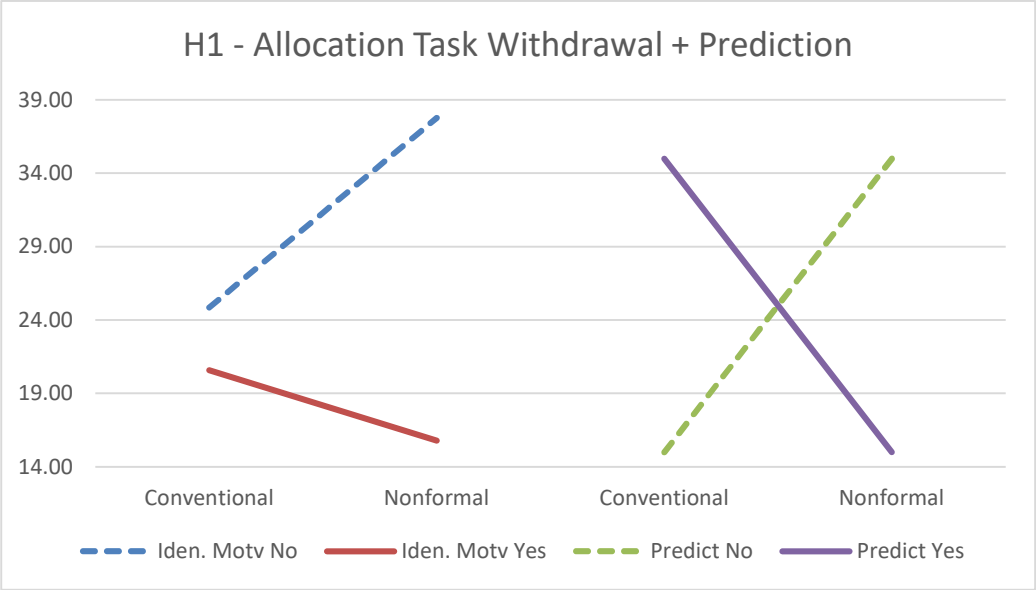


Table 1 - Descriptives - Allocation Task Withdrawal

		Identified Motivation		
		No	Yes	Total
Conventional Frame	Mean	**24.86**	**20.59**	**22.76**
	Std. Dev.	26.07	30.93	28.37
	n	28	27	55
Nonformal Frame	Mean	**37.78**	**15.78**	**26.78**
	Std. Dev.	40.06	19.73	33.19
	n	27	27	54
Total	Mean	**31.20**	**18.19**	**24.75**
	Std. Dev.	33.98	25.81	30.77
	n	55	54	109

Table 2 - Two Way ANOVA on Allocation Task Withdrawal

Source	Sum of Squares	df	Mean Square	F	p
Communication Frame	447	1	447	0.494	0.484
Identified Motivation	4698	1	4698	5.190	0.025
Frame * Identified Motivation	2142	1	2142	2.366	0.127
Error	95053	105	905		

Figure 2 - Pattern of Results + Predictions: Allocation Task Deviation Score

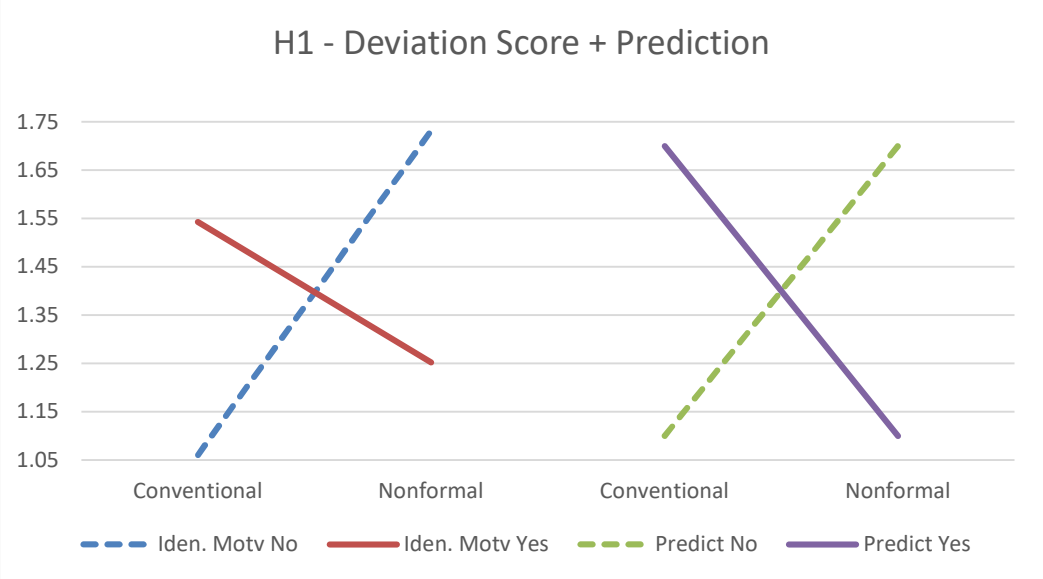


Table 3 - Descriptives: Allocation Task Deviation Score

		Identified Motivation		
		No	Yes	Total
Conventional Frame	Mean	**1.061**	**1.543**	**1.297**
	Std. Dev.	1.019	1.373	1.219
	n	28	27	55
Nonformal Frame	Mean	**1.732**	**1.252**	**1.492**
	Std. Dev.	1.462	0.939	1.241
	n	27	27	54
Total	Mean	**1.390**	**1.397**	**1.394**
	Std. Dev.	1.289	1.174	1.228
	n	55	54	109

Table 4 - Two Way ANOVA on Allocation Task Deviation Score

Source	Sum of Squares	df	Mean Square	F	p
Communication Frame	0.000	1	0.000	0.000	0.997
Identified Motivation	0.987	1	0.987	0.666	0.416
Frame * Identified Motivation	6.305	1	6.305	4.256	0.042
Error	155.529	105	1.481		

Figure 3 - Pattern of Results + Predictions: Common Pool Withdrawal

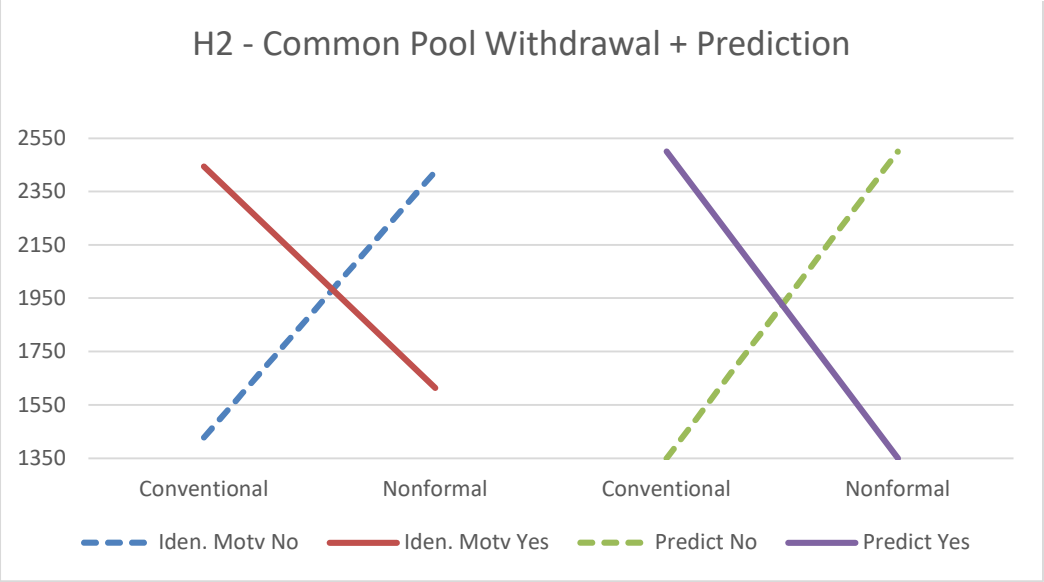


Table 5 - Descriptives: Common Pool Withdrawal

		Identified Motivation		
		No	Yes	Total
Conventional Frame	Mean	**1429**	**2444**	**1927**
	Std. Dev.	1520	1788	1720
	n	28	27	55
Nonformal Frame	Mean	**2426**	**1614**	**2020**
	Std. Dev.	1994	1716	1887
	n	27	27	54
Total	Mean	**1918**	**2029**	**1973**
	Std. Dev.	1823	1786	1797
	n	55	54	109

Table 6 - Two Way ANOVA on Common Pool Withdrawal

Source	Sum of Squares	df	Mean Square	F	p
Communication Frame	283395	1	283395	0.091	0.763
Identified Motivation	190163	1	190163	0.061	0.805
Frame * Identified Motivation	22752968	1	22752968	7.342	0.008
Error	325384786	105	3098903		

APPENDIX B. EXPERIMENT INSTRUCTIONS & MATERIALS

5.1 Experimental Instructions

{{After the initial pre-test questions and filler tasks, the participants are directed to the main experiment}}

[This introductory page is the same for both roles]

Welcome to the study! On the next few pages, you will review some instructions and be asked to make decisions. Your decisions are completely anonymous to other participants in the study and to the experimenters. Additionally, no deception is used in this study. While the study asks you to imagine yourself in a fictional setting, the decisions you make will result in real-life, financial consequences.

{subsequent page}

[CEO role]

In this study, you will make a recommendation about how resources should be allocated by another participant in the study. That participant will then decide, based on your recommendation, an actual donation to a charity in the animal rights advocacy sector. The identity of the organization will be revealed at the end of the study. On the next screen you will view the resources and options for recommendation.

{subsequent page}

You have 5000 experimental dollars to allocate to a reputable, 501(c)3 animal rights advocacy organization according to one of the options below. The identity of the organization and the conversation rate from experimental "dollars" to U.S. Dollars will be revealed at the end of the study.

(Note that General Program Costs relate to the main organizational mission objectives, Fundraising Costs assist with generating revenues, and Administrative Costs reflect the financial needs of non-program operations.)

Please choose between one of the following options:

- 20% Administrative / 20% Fundraising / 30% Wildlife Conservation / 30% Animal Adoption
- 30% Administrative / 30% Fundraising / 20% Wildlife Conservation / 20% Animal Adoption
- 40% Administrative / 20% Fundraising / 20% Wildlife Conservation / 20% Animal Adoption

{final page after completing demographic PEQs}

This is the end of the study. Thank you for your participation!!

The identity of the charitable organization is the World Wildlife Foundation. Other participants in the experiment were given your recommendation as a guide for a real-life donation.

To obtain the final amounts/purposes donated at the end of all study sessions, please message the experimenters via the anonymous Prolific chat function.

As a result of other participants' actions, you may receive a bonus payment via Prolific within two weeks. This payment represents your share of a similar allocation decision made by another participant. The bonus payment will range from $0 to $4. The conversion rate from experimental currency to USD was 4000 to 1.

[Employee role]

Imagine you are a Department Manager at a local, mid-range company. You were hired for your passion and expertise, and have just received a new assignment related to the company's community engagement. On a subsequent page, you will view a communication from the company's CEO [another participant in the study] with the details. After that, you will decide how to allocate the provided funds associated with the project. The recommendation is NOT a requirement and the decision is entirely yours.

You will have 5000 experimental dollars to allocate. Based on your allocation, an actual donation will be made to a reputable, 501(c)3 organization in the animal rights advocacy sector. The identity of the organization and the conversion from "experimental dollars" to U.S. Dollars will be revealed at the end of the study. (For any monies earned in the course of the experiment, you will be paid via Prolific bonus payment within two weeks.)

{subsequent page – employee role views stylized email: see §5.2, figures #4 & #5}

{subsequent page – allocation task: See §5.2, figure #6}

{subsequent page}

Thank you for your allocation.

In addition to the budget provided for the firm's community involvement, you have also been provided a discretionary fund. The fund contains another 5000 experimental dollars. You may take out as much as you'd like, and whatever is left after your withdrawal will be multiplied by 1.6 and split between you and your CEO [the participant in this study who chose your allocation].

{{Here the participant enters an integer between 0 and 5000 and the amounts earned by the CEO and the participant are auto-calculated and displayed below the input field. This was done to ensure the participant truly understood the allocation/calculation.}}

{final page after completing demographic PEQs}

This is the end of the study. Thank you for your participation!!

Based on your decisions in the study, the following amounts have been donated to World Wildlife Foundation for the following purposes:

{{The amounts, in experimental dollars, are displayed next to each allocation option.}}

Fundraising _____
Administrative_____
Programs - Wildlife Conservation_____
Programs - Animal Adoption_____
Withdrawal_____

To obtain the final amounts/purposes donated at the end of all study sessions, please message the experimenters via the anonymous Prolific chat function.

You have earned the following based on your decisions in the study:_____ {{in USD}}

(The conversion rate was 4000 experimental dollars to $1.00)

5.2 Sample Instrument Materials

Figure 4 - Stylized Email (Conventional Frame)

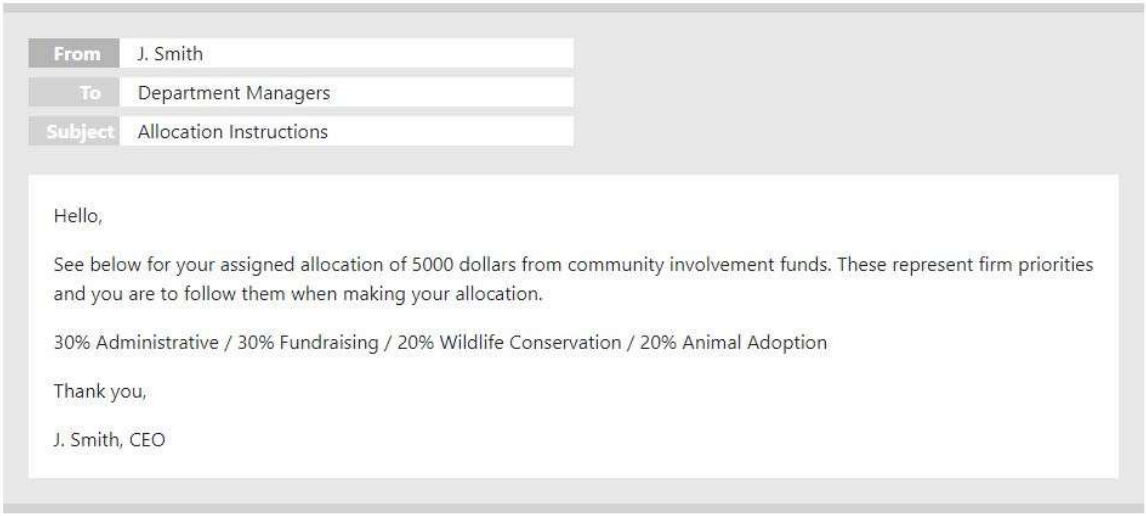


Figure 5 – Stylized Email (Nonformal Frame)

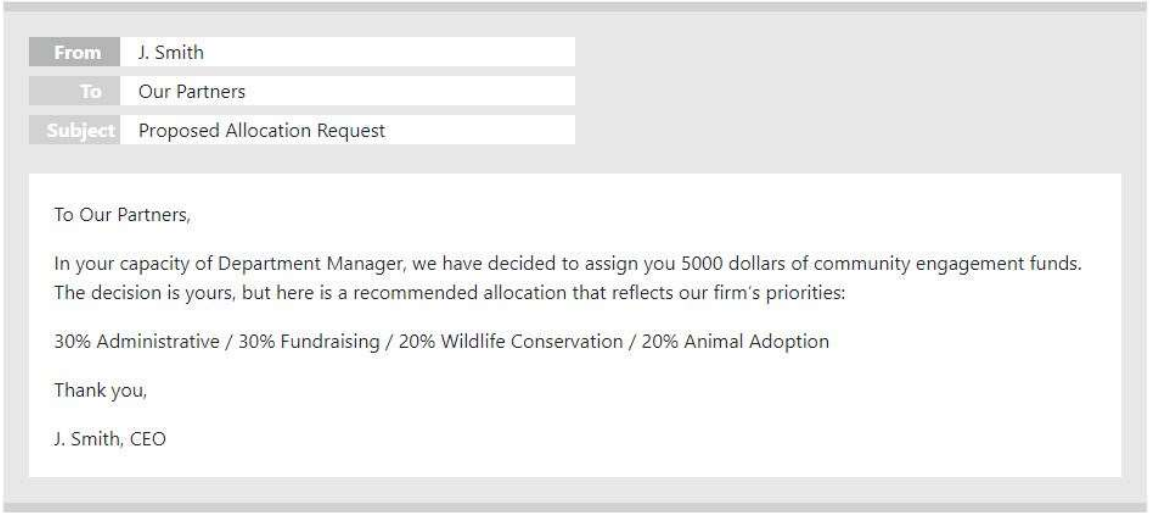
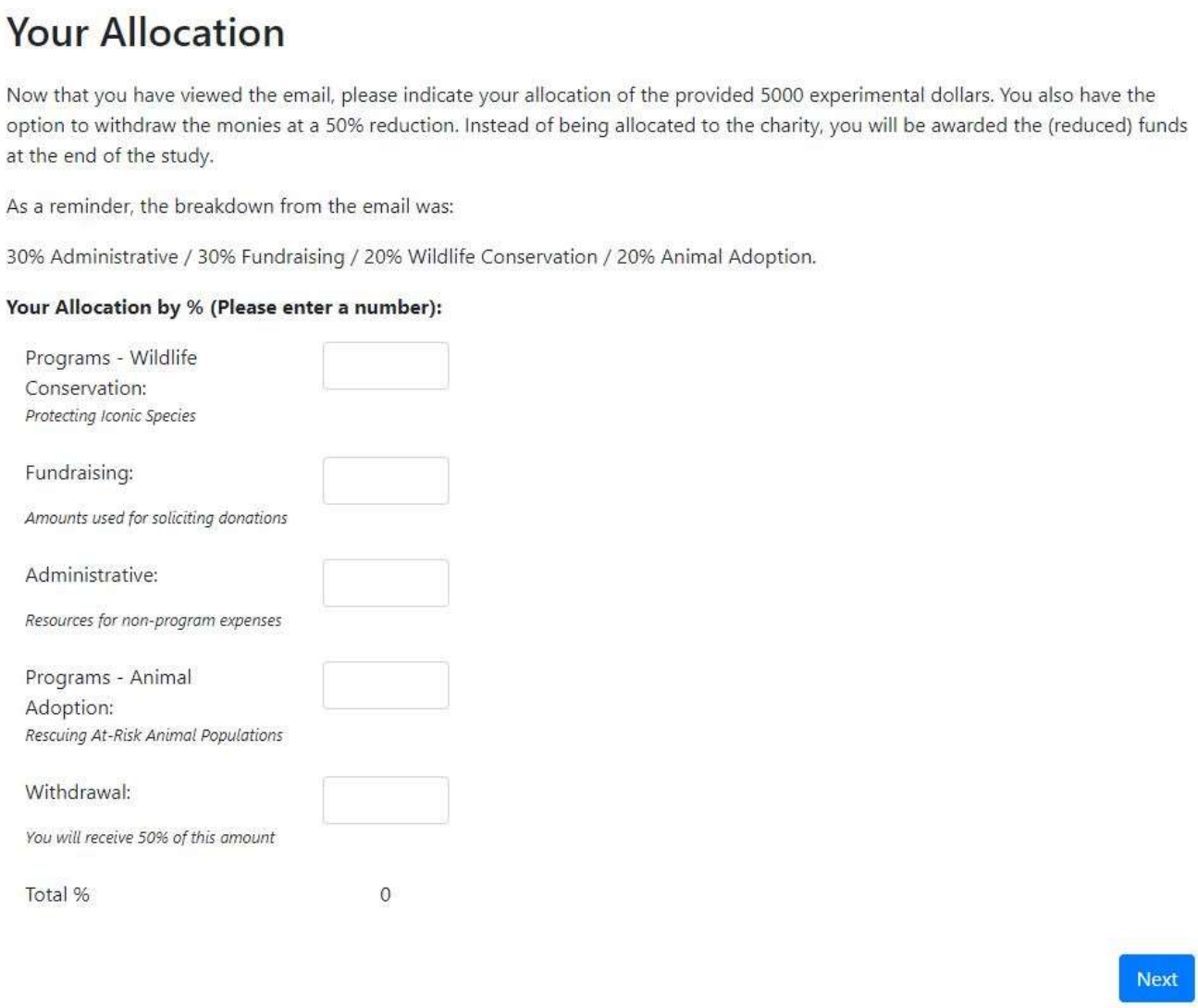


Figure 6 - Allocation Task Page



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